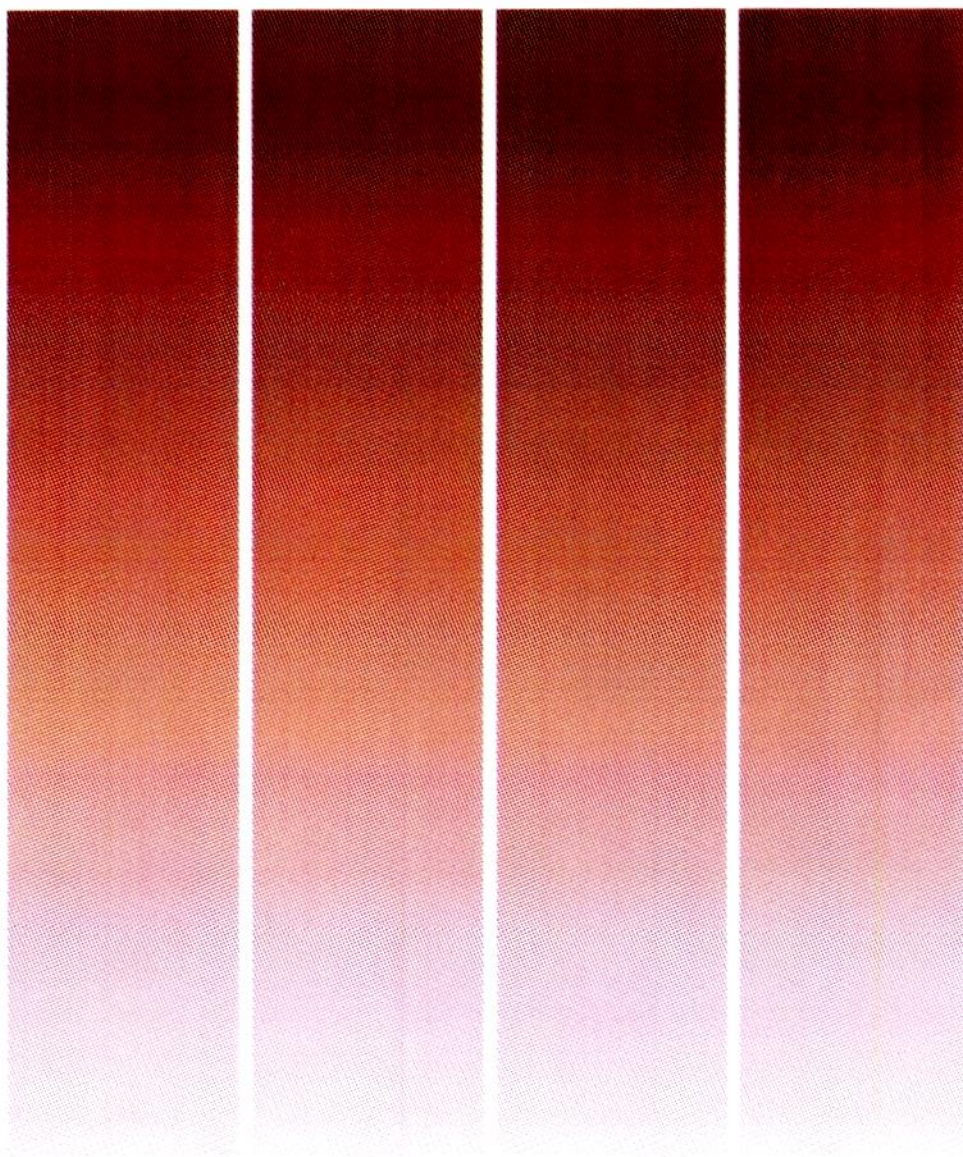


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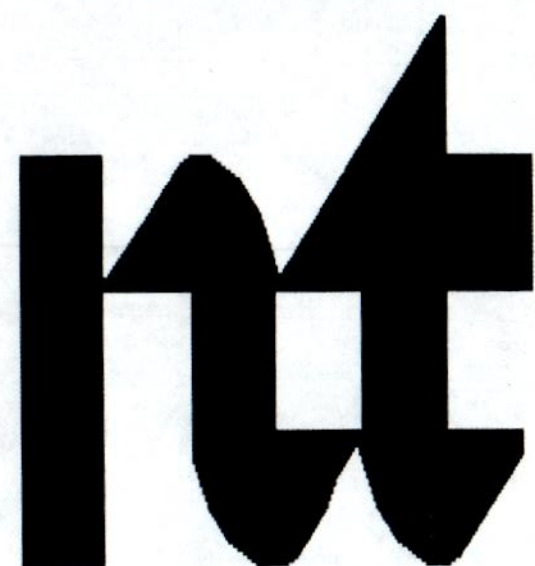
Your Window to the World





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PART I
NORTHERN TELECOM
CORPORATE OVERVIEW



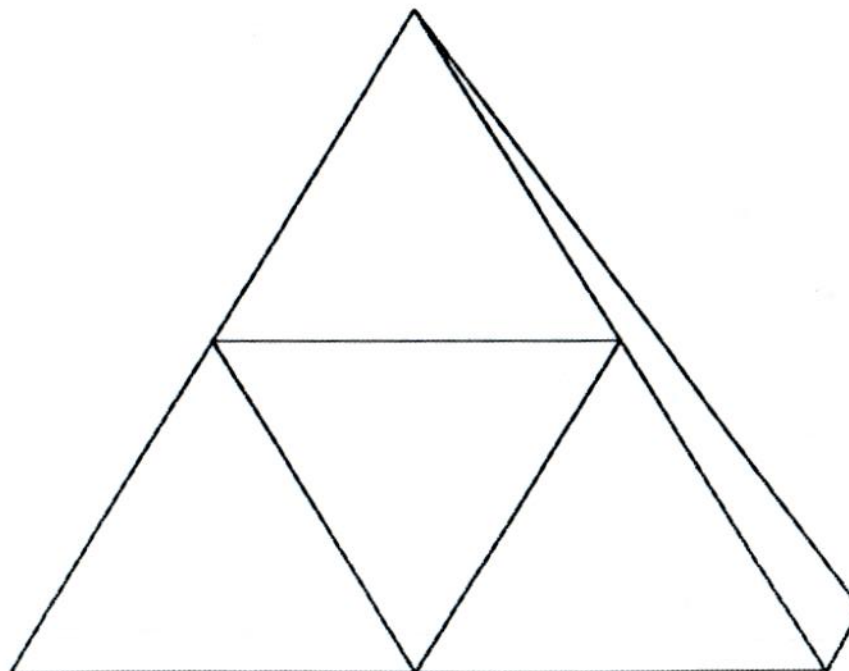
**northern
telecom**



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Tri-Corporate Family

Northern
Telecom

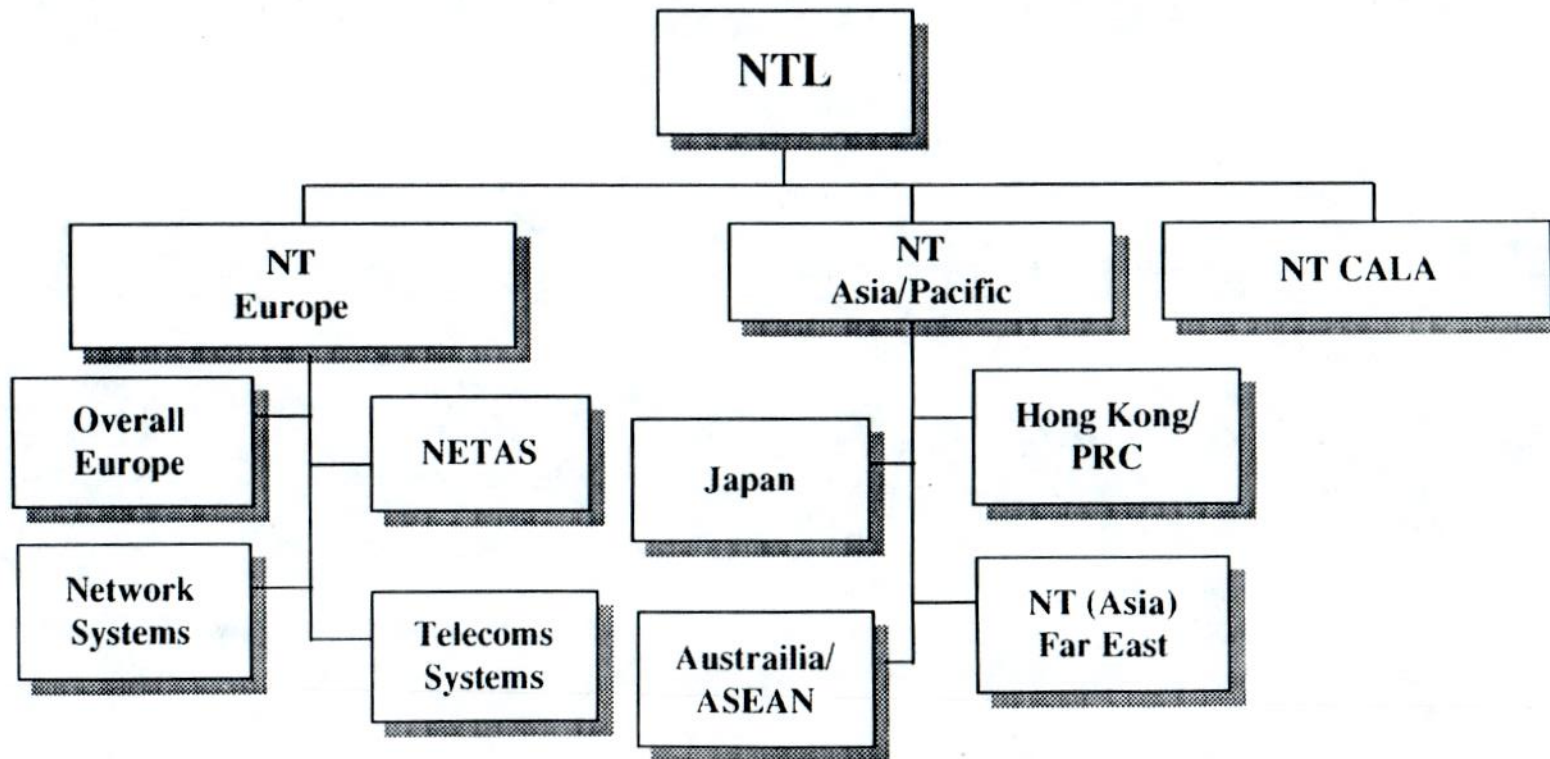


Bell-Northern
Research

Bell Canada



International Organization





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Northern Telecom Worldwide

■ NT Canada ■ NT CALA ■ NT U.S. ■ NT Europe ■ NT Asia / Pacific





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Major R&D Facilities

Australia

- New South Wales

Canada

- Montreal, Quebec
- Ottawa, Ontario
- Toronto, Ontario

China

- Guang Dong

England

- Harlow
- Maidenhead

France

- Marne la Vallée

Ireland

- Galway

Japan

- Tokyo

U.S.A.

- Atlanta, Georgia
- Mountain View, California
- Raleigh, North Carolina
- Richardson, Texas



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57,000 Employees





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Digital Systems in Service

- **6,700 DMS Switching Systems**
- **62,000 Meridian SL-1/SL-100**
- **350,000 Norstar Systems**
- **52 Million Digital Switching Lines**
- **3,200 DPN Nodes**



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Digital World

- **DMS:** Number 1 worldwide
- **M-1:** Number 1 worldwide
- **DPN:** Number 1 worldwide
- **DMS250:** Number 1 worldwide
- **Norstar:** Number 1 worldwide

Vision 2000





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PART II
NORTHERN TELECOM
CALA OVERVIEW



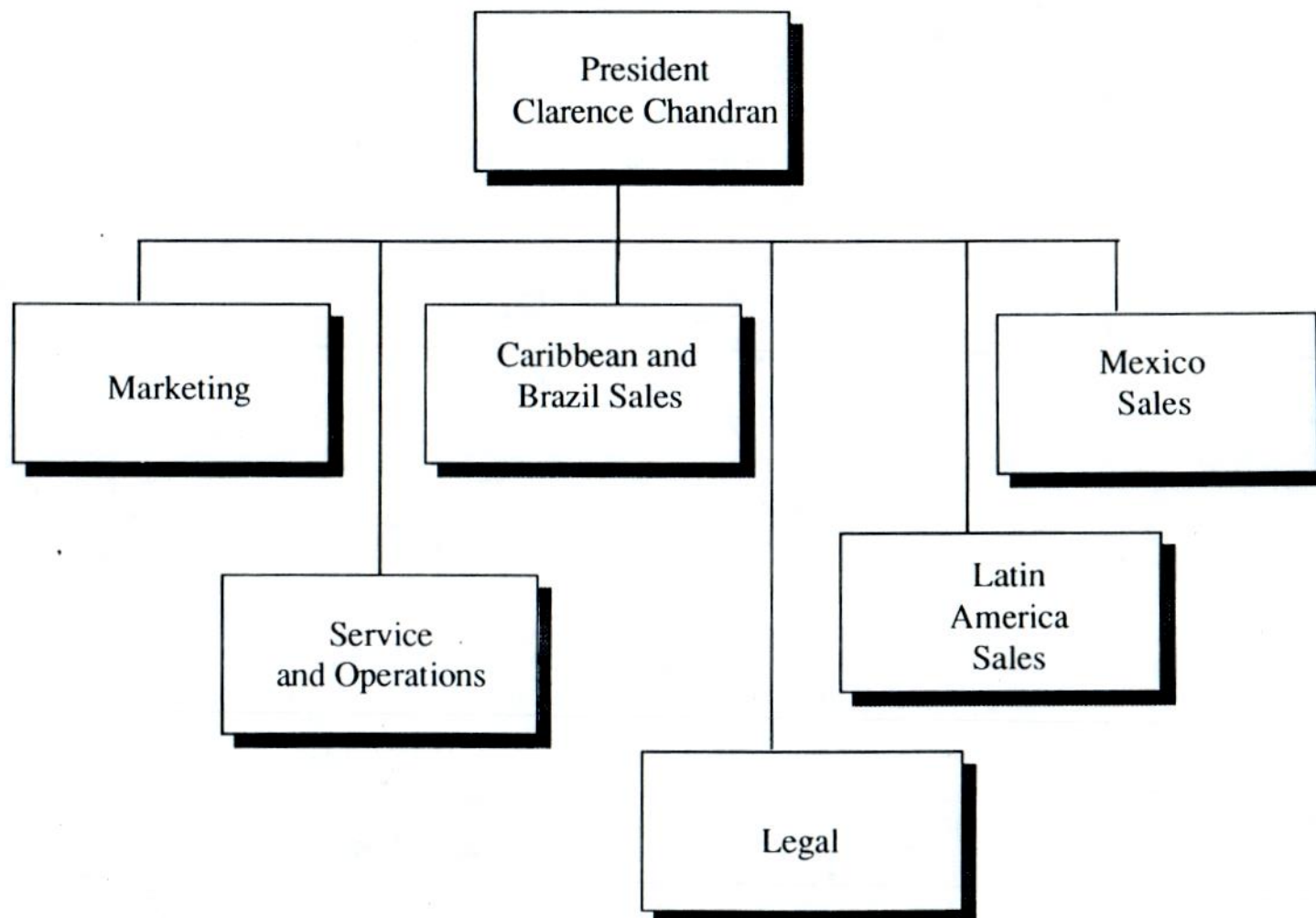
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***Northern Telecom
in the Caribbean
and Latin America***



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*More than 25 years in the region,
with systems in over 47 countries*

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LATIN AMERICA

Argentina	Paraguay
Colombia	Peru
Costa Rica	Bolivia
Ecuador	Chile
Honduras	El Salvador
Panama	Mexico
Nicaragua	Brazil
Ecuador	Uruguay
Guatemala	Venezuela

CARIBBEAN

Jamaica	Puerto Rico
Aruba	Trinidad
Tortola	Belize
Bermuda	Bermuda
Barbados	Grenada
Curacao	Turks & Caicos
Dom Republic	St. Maarten



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1990	1992
175 Employees	305 Employees
2950 Norstars	16,500 Norstars
1250 Meridians	1,875 Meridian PBXs
160 DMS	210 DMS
1570K Total Lines	1850K Total Lines

nt northern
telecom



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<i>Key Milestones</i>	<i>Date</i>
NT Begins PBX Activities in Caribbean	1967
NT CALA Startup	1975
First DMS System in the Caribbean (Barbados)	1979
First DMS/International System Sold (Peru)	1983
First Major Cellular Contract in Mexico	1989
TELMEX Implements Tops	1991
Largest ISDN Network in Latin America Lagoven-22,000 Lines 27 Meridian 1's	1992
Largest Data Packet Network In Brazil Embratel-23,000 Ports	



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	<i>Caribbean</i>	<i>LA</i>	<i>Mexico</i>
Countries	29	17	1
Population (M)	25	324	90
Total	47 Countries 439 Population		



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PART III
NORTHERN TELECOM
PRODUCT PORTFOLIO



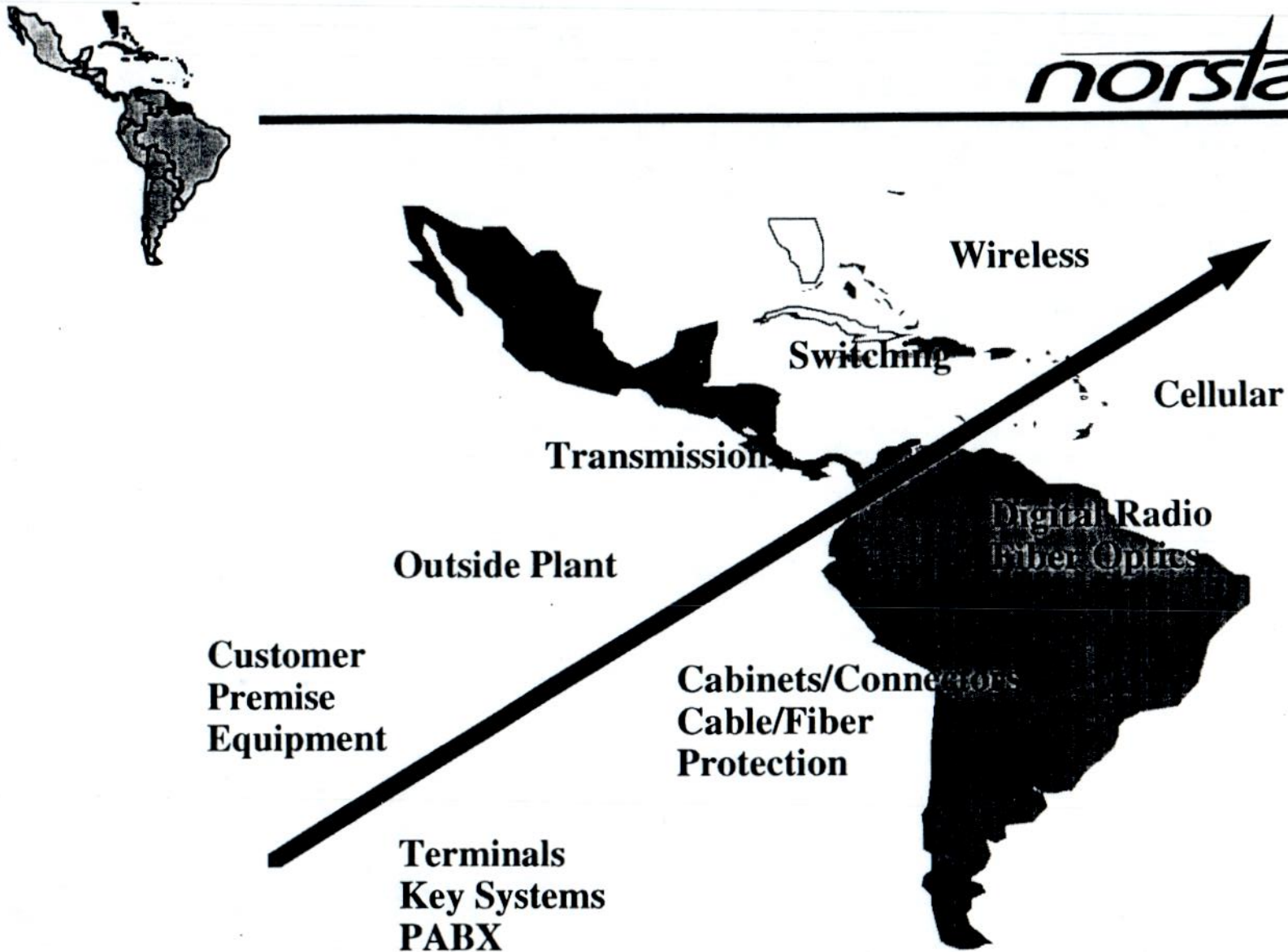
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*Northern Telecom
Product Portfolio*



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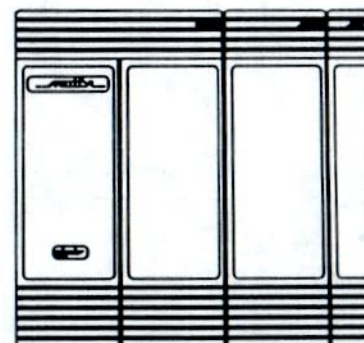




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Private Networks

Meridian Norstar (1-80 lines)



The Norstar Key Service Unit is the heart of the Norstar digital key system and is available in three models: 3X8, Compact and Modular.



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**Meridian 1 Option 11
(Up to 200 lines)**



**Meridian 1 Options 51, 61, 71
(200-2000 Lines)**

The Meridian 1 Line of PBXs come in various sizes from the Option 11 to the Option 71, and can accomodate 60 stations or 10,000 stations.



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PART IV
NORSTAR PRODUCT OVERVIEW



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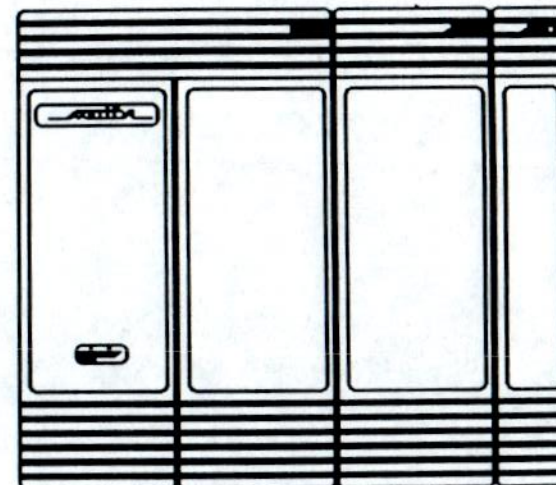
Norstar Product Family - KSU's



Norstar 3X8



**Norstar Compact
6X16**



**Norstar Modular
Up to 128 Ports**

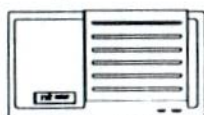
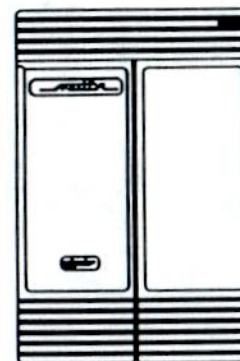


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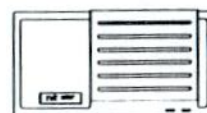
Norstar Product Family Peripherals



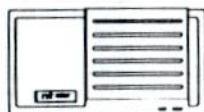
StarTalk and StarTalk Mini



ATA



SMDR



DCI



SAPS



norstar



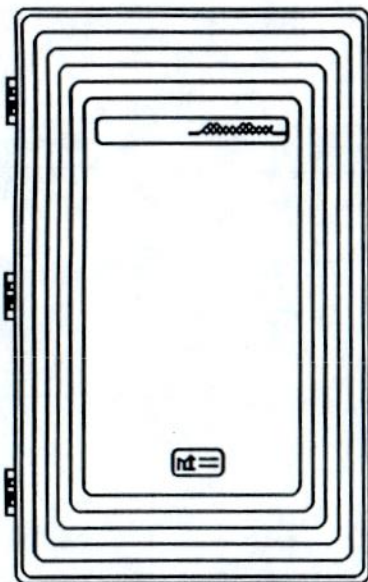
Norstar 3X8

- The 3X8 is a self-contained unit that functions with built in DR5 software and an external power supply.
- System can be configured with up to 3 CO lines and 8 stations.
- The 3X8 is easy to install, and comes in a convenient size. Therefore the system can fit virtually anywhere without taking up too much space.



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Norstar Compact 6X16



- The compact (6X16) KSU is a self-contained unit that is not expandable to a Modular KSU. It has one emergency transfer teleadapt port and an internal power supply.
- The system can be configured with up to 6 lines and 16 stations.
- The cartridge includes all administration and call processing features required to operate a Norstar Compact System.



norstar

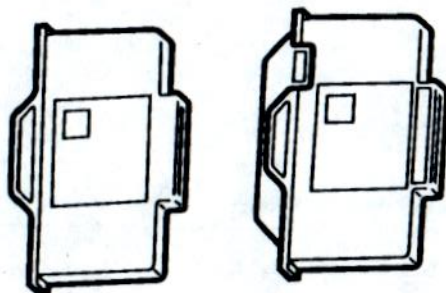


- **Modular and cartridge based design.**
- **Ease of maintenance, expansion and customization.**

- **The Key Service Unit (KSU).**
- **The base KSU supports 24 stations and 8 CO lines.**
- **The KSU can be expanded by adding Trunk Modules for more CO lines and Station Modules for additional Norstar sets.**
- **A fully expanded KSU can support up to 128 ports.**



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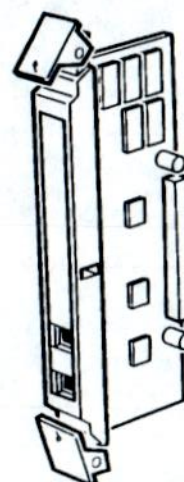


Feature Cartridge

- Contains the software required to run Modular.
- Call Processing, Administration and Maintenance features and functions.
- The Feature Cartridge slides into the smaller of the two slots in the KSU.

Expansion Cartridge

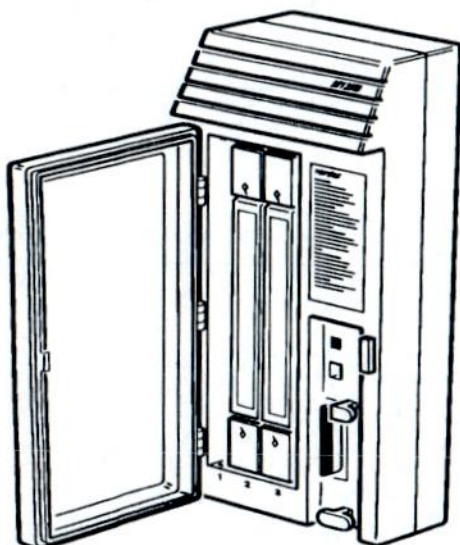
- 2-Port and 6-Port Expansion Cartridge
- Allows up to 2 or 6 Modules can be added to the KSU.
- Plugs into the larger slot in the KSU.
- Connected via DS-30 Cables.



nt northern
telecom



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Trunk Module

- **The Trunk Module allows the addition of Trunk Cartridges to the KSU.**
- **Each Trunk Module holds up to 3 Trunk Cartridges.**
- **Each Trunk Module adds up to 12 CO lines (4 CO lines per Trunk Cartridge).**
- **Each has 1 emergency transfer port.**

Trunk Cartridge

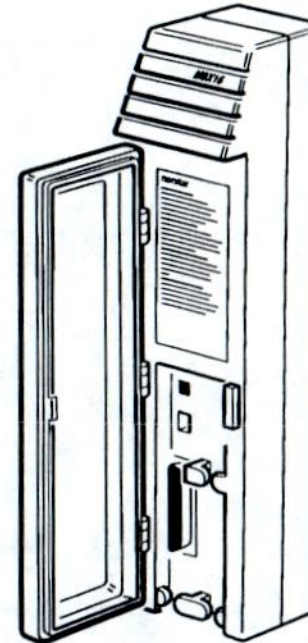
- **Each Trunk Cartridge adds 4 CO lines to the KSU.**
- **Fits into a Trunk Module (maximum 3 per Module).**



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Station Module

- **Each station module allows for the addition of up to 16 more stations.**
- **Stations include sets and peripherals such as the ATA**

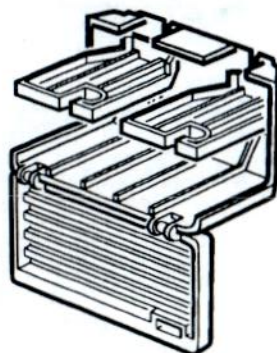




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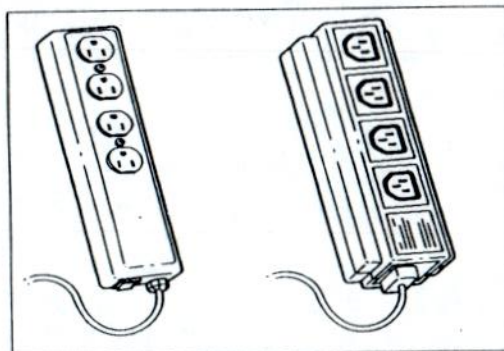
DS-30 Cables

- **Connect Trunk or Station Modules to the KSU.**



Cable Trough

- **Contains and protects cabling to the KSU, Trunk Modules and Station Modules.**
- **Connected to the bottom of the KSU.**



Power Bar

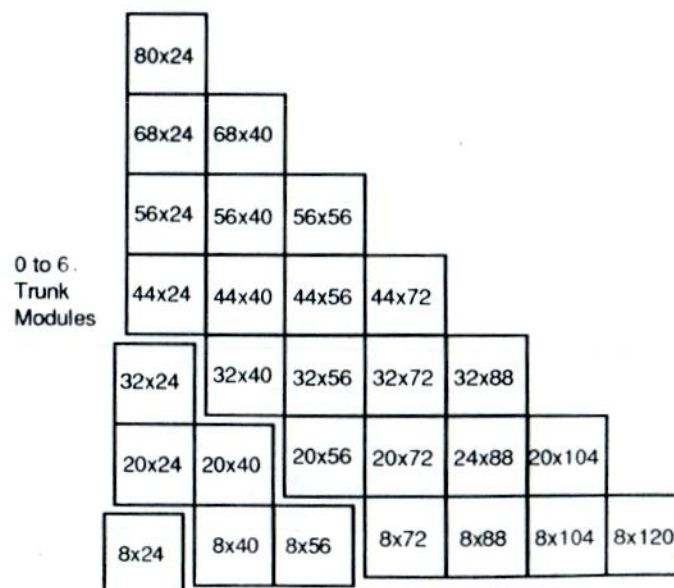
- **Provides single power source, located in the Cable Trough.**
- **Can be linked together if required.**



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System Configuration

- KSU supports up to 8 CO lines and 24 stations (8X24).
- KSU can be expanded by 2 or 6 Trunk and/or Station Modules.
- Enables precise customization and future growth capability.

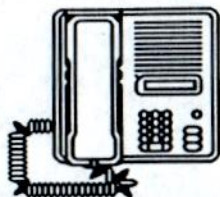


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telecom

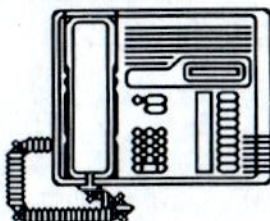


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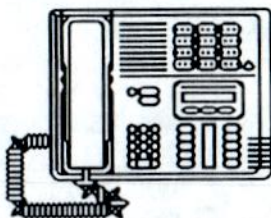
Norstar Product Family - Terminals



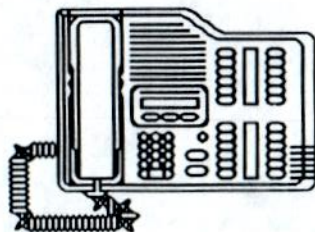
M7100 - Single line display, no handsfree



M7208 - Single line display, 8 programmable line/feature keys



M7310 - Two line display c/w soft keys, 10 programmable line/feature keys



M7324 - Two line display c/w soft keys, 24 programmable line/feature keys



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Global Success

- ▶ wide market acceptance
- ▶ over 4,000,000 stations
- ▶ over 70 countries





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Simply the best



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PART V
NORSTAR FEATURES



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- Access Signalling
- Accidental Disconnect Protection
- Answer Groups
- Autodial Buttons (external calls)
- Autodial Buttons (internal calls)
- Automatic Callback
- Automatic Handsfree
- Automatic Hold
- Automatic Incoming Line Selection
- Automatic Recall
- Automatic Set Relocation
- Auxiliary Ringer Interface
- Background Music
- Button (Key) Inquiry
- Callback
- Calling Number Delivery Blocking
- Call Duration Timer
- Call Forward (all calls)
- Call Forward no answer
- Call Forward override
- Call Forward Busy
- Call Identification Interface
- Call Identification Interface T/C
- Call Log
- Call Park (with Callback)
- Call Pickup (group)
- Call Pickup (directed)
- Call Queuing
- Camp on (Call Waiting)
- Central Answering Position
- Centrex / PBX Reachthrough
- CLASS
- CLASS Call Display
- Compression of Feature Codes
- Conference (3-party)
- Contrast Adjustment
- Customer Originated Trace
- Date and Time Display
- Delayed Ring Transfer
- Dial Intercom
- Dialpad Feedback
- Dial-0 Set
- Dialing Modes(on-hook)
- Direct Inward Dial
- Direct Inward System Access
- Disconnect Supervision
- Discriminating Ring Cadences
- Distinctive Ringing (ring type)
- Distinctive Ringing/Call Waiting
- Do Not Disturb
- Do Not Disturb Override
- DN Length
- E&M Trunks
- Emergency Transfer -Power Fail Cut-through
- Exclusive Hold
- Flexible Call Restrictions / Overrides
- Flexible Numbering Plan
- Group Listening
- Handsfree Answerback
- Handsfree/Mute Capability
- Headset



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- Held Line Reminder
- Hot Line
- Incoming Call Information Display
- I-hold / U-Hold Indication
- Language Choice
- Last Number Redial
- Line Pools (Busy)
- Line Pools (Multiple)
- Link
- Listen on Hold
- Long Tones
- Manual Line Selection
- Message Waiting Indication
- Message Waiting / Reply
- Moving Line Buttons
- Music / Tone / Silence on Hold
- Night Service (Flexible)
- On-hook Dialing
- Page Origination and Reception
- Pause
- Pre-selection / Call Screening
- Prime Line
- Prime Phone
- Priority Call
- Privacy/Non Privacy
- Private Lines
- Programmed Release
- Release
- Restrictions/Overrides Enhanced
- Restriction Override Passwords
- Ring Again - on busy set
 - on busy Line Pool
 - on No Answer
- Run /Stop
- Saved Number Redial
- Selective Call Acceptance
- Selective Call Forward
- Selective Call Forwarding
- Selective Call Rejection
- Send Message
- Service Modes
- Speed Dial - System
 - Personal
- Telephone Admin Lock
- Timed Release
- Transfer - Direct
 - with Announcement
- Trunk Answer
- Unsupervised Conference
- Voice Call
- Voice Call Deny
- Volume Control Bar



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Access Signalling (End-to-End Signalling)

- Change a set from pulse mode to tone
- Set automatically returns to the original mode
- **Allows users who have pulse lines to send tones to access equipment. DR2**

Accidental Disconnect Protection

- If the handset goes on-hook less than one second after going off-hook, the call being answered is switched from the handset to the speaker instead of being disconnected.
- **Call can not accidentally be lost by fumbling the handset. DR2**

Answer Groups

- One set can monitor the ringing of a group of sets and answer their calls by pressing a DSS button.
- When a call is directed to one set, an Answer Key on a second set allows the second set to receive visual indication and optional ringing. The call may be answered at either set.
- **Allows the monitoring or answering of calls to another set. DR2**



norstar

Autodial Buttons (external calls) Feature * 1

- One button access to frequently dialed external numbers.
- Store external number sequence on memory button.
- Up to 24 digits and characters.
- A line number or pool access code can be programmed onto the autodial button.
- Saves time dialing a number.
- Allows the programming of more digits for international calls or access codes.
- No need to remember the telephone number.
- Single button calling.

DR2/3

Autodial Buttons (internal calls) Feature * 2

- One button access to frequently dialed internal numbers.
- Store internal number sequence on memory button.
- Saves time dialing a number.
- No need to remember the intercom number.
- Single button calling.

DR2/3



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Automatic Callback

- By dialing the activation code the user can automatically dial the last outgoing number called regardless of whether the call was answered, unanswered or busy.
- Similar to Ring Again
- System will monitor the line for 30 minutes and will notify the user with special ringing when the destination party becomes free. DR2

Automatic Handsfree

- The set's microphone and speaker automatically turn on every time the user presses a line, line pool or intercom button or uses autodial, speed dial, voice call, saved number redial, or last number redial.
- Automatically turns on headset, if attached.
- **Saves time and effort when making a handsfree call.** DR2/3



norstar

Automatic Hold

- Active line will automatically be placed on hold if a second line button, an intercom button or a Transfer button.
- Prevents internal and external calls from being accidentally cut off.
- Saves the step of having to press the Hold button. **DR2**

Automatic Incoming Line Selection

- Lift the handset or press Handsfree to answer a call ringing at the set.
- Don't have to know which line is ringing to answer a call. **DR2**

Automatic Recall

- Permits the user to dial an access code and have the CO automatically redial the number of the last incoming call whether answered or not.
- Similar to Ring Again **DR5**



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Auxiliary Ringing

- External lines ring a customer-supplied external ringer.
- Specific sets may be programmed to ring this auxiliary ringer.
- **Allows users to hear their phones when away from their desks, in a noisy environment or working after-hours. DR2**

Automatic Set Relocation

- The user can move the set to a different Norstar port and retain all attributes and button assignments automatically.
- **Adds convenience and saves time when sets are temporarily or permanently moved.**
- **New extension numbers do not have to be learned.**
- **Directory lists do not have to be updated. DR2**

Background Music

- Listen to music through the set speaker.
- Music can be turned on and off.
- Music turns off when the telephone rings or a call is placed.
- **Provides an audio network throughout the company.**
- **Improves the general office environment.**
- **Allows individuals a choice of listening to music. DR2**



norstar

Button Inquiry

Feature * 0

- Shows additional information over DR11 including:
 - the Speed Dial entries,
 - the Last Number dialed,
 - the Saved Number,
 - the line number and name,
 - the Prime line number,
 - the intercom number, name and port,
 - the number and name of Internal Autodial buttons,
 - and the line number and telephone number of external Autodial buttons.
- Provides additional information.
- Users can verify stored numbers before dialing.
- Allows user to re-label or replace button caps without activating the feature programmed onto that button.

DR2/3



norstar

Callback

- Calls that have been parked or transferred and not answered will return to the originating set.
- The amount of time or number of rings before Callback occurs is set in Configuration.
- **Better customer service; ensures calls are not lost or left unattended too long. DR2**

Call Duration Timer

- Temporarily shows on the display the approximate length of the most recent or current call.
- Should be used just prior to releasing a call.
- **Enables users to keep track of time spent on calls. DR2**

Call Forward (all calls) Feature 4/#4

- Forward all internal and external calls to another set.
- **Ensures user's calls will be answered.**
- **Improves customer service. DR2**



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Call Forward no answer

- Transfers all internal and external calls to another location if the call is not answered within a predetermined number of rings.
- Ensures a user's phone is answered even if the user is unable to answer the call or has forgotten to Call Forward (all calls) his/her telephone.

DR2



Call Forward override

- When one telephone is forwarded to another, the "forward to" telephone is able to call the "forwarded" telephone.
- Allows the "forwarded to" set to call the forwarding set. **DR2**



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Call Forward (Busy)

- If a user's set is already busy (the user is on a call, a call is already ringing, or calls are presently on hold) any additional internal or external calls are immediately transferred to another set.
- The user can program which set will receive the call.
- **Calls are answered promptly.**
- **Users are not disturbed while on calls.**

DR3

Call Identification Interface

- Detects and converts incoming CLASS call information to a message on the Norstar messaging channel.
- Provides call display associated features only for lines connected to the KSU
 - Compact Call Identification Interface, CII-C6
 - Modular Call Identification Interface, CII-M8
 - Only supports lines 1-8

DR5



norstar

Call Identification Interface Trunk Cartridge

Modular Call Identification Trunk Cartridge, CI T/C

- Required for lines 9 and above for CLASS services
- Detects and translates incoming CLASS information for display on Nostar sets

DR5

Call Log

Feature 812

- Records information pertaining to incoming call such as Calling Name, Calling Number, Sequence Number, New Call Indication, Date and Time, Norstar Line Name, Answered Call Indication, Long Distance Indicator, Repeat Call Counter, and Logit Indicator
- The call log feature can be on a Globalbasis and/or set by set basis.
- Autologging allows your telset to automatically log your calls. 160 for 6X16, 600 for 8X24
- Determine which calls get logged, no one answered, unanswered by me, log all calls, no autologging
- Call back from the Log/Editing number in the call log
- Removing log item (Autobumping)
- Password Protected

DR5



norstar

Call Park (with Callback)

Feature 74

- Call Park places an active call on hold, allowing it to be retrieved from any Norstar set by means of the automatically assigned retrieval code (101 to 109).
- **Personalizes office communications.**
- **Allows called party to prepare for a call.**
- **Allows professional answering of colleagues' phones.**
- **Provides for easier use of phones.**

DR2

Call Pickup (directed)

Feature 76

- Directed Call Pickup allows the user, from any set in the system, to answer a call ringing at a specific set by specifying that set's intercom number.
- **Saves time.**
- **Ensures communications effectiveness.**

DR2



norstar

Call Pickup (group)

Feature 75

- Any member of a Pickup Group can answer an internal or external call ringing at another set in the group.
- Allows users to answer calls ringing on another phone in their pickup group from their own phone.
- Greater convenience for the user and speedier service for the caller.

DR2

Call Queuing

Feature 801

- When more than one call arrives at a set, they are automatically queued.
- Incoming calls are then answered in the order in which they arrived.
- Calls can be processed faster.
- Calls that have been waiting the longest are answered first.

DR3



norstar

Camp On (Call Waiting)

Feature 8 2

- A call can be transferred to a set even though all its lines are busy.
- The call waits at that set, producing alerting tones until it is answered or returns to the telephone that camped the call.

- Allows more calls than a set has lines to wait for the user to answer.
- Soft alerting tones immediately alert that person that a call is waiting.

DR3

Calling Number Delivery Blocking

- Stops the delivery of calling number information on calls the user originates.
- The called party will receive “private” in place of the caller’s number.

DR5



norstar

Central Answering Position (CAPs)

- The CAP Module displays the busy/not busy and Do Not Disturb status of the telephones
- Buttons on the CAP Module are programmed as Inside Autodial buttons each with a corresponding indicator.
- The Cap Module is connected to an M7324 set.
- **Allows one set to monitor the status of all the sets in the system. DR2**

Centrex / PBX Reachthrough

- Users can program the activation and deactivation of a Centrex feature to a single Autodial button.
- When used behind Centrex, DR11 allows any special Centrex ringing cadences to be passed directly to the set (ex: Ring Again).
- **Allows Centrex or PBX features to be accessed in a convenient way DR2**



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CLASS Call Display

- Gives the user of a Norstar set the following information on an incoming call:
 - Caller's Name
 - Telephone Number
 - Name of Norstar Line
 - User can choose which order they appear in
 - Displayed between the first and second ring cycle
 - Displayed automatically or manually

DR5



norstar

CLASS/CMS?

- CLASS/CMS-Custom Local Area Signalling Services (US)
- CMS-Call Management Services (Canada)
- The delivery of information from the CO switch to customer premise equipment to provide access capabilities supported by the network.

DR5



norstar

Conference (3-party)

Feature 3

- Establish a call with two other parties, internal or external.
- Once a conference is connected:

Consultation: put the entire conference call on hold.

The other two parties can still talk to each other.

Disconnect one party: disconnect one call while keeping the second.

Independently hold two calls: place the two parties on hold independently.

Split a Conference: place one call on hold while talking to the other.

Transfer from Conference: transfer a call in conference to another set.

- **Allows three people in different locations to be involved in a conversation.**
- **Allows the Norstar user to be in control of the conversation.** DR2

Contrast Adjustment

Feature *7

- Adjust the contrast of the display to one of four different settings.
- **Allows maximum readability according to individual lighting conditions.** DR2



norstar

Customer Originated Trace

- Allows users to immediately put a trace on the source of malicious calls.
- Traces the number of the last incoming call, then forwards the information to the Telco.

DR5

Date and Time Display Feature 803

- Date and Time appear on the display of an idle set or while the user is on a call.
- Allows the user to see the Date and Time when the set is idle or not.

DR2/3



norstar

Delayed Ring Transfer

- After a pre-determined number of rings, an unanswered call on a CO line is transferred to the prime set.
- Same feature as Call Forward no answer.
- **Improves customer service because calls are assured of being answered. DR2**

Dial Intercom

- Internal calls are made by selecting an internal line and then dialing an intercom number.
- Intercom calls allow all Norstar features such as Ring Again, Messaging, and Priority Call.
- Set, line, feature and button names as well as prompts are shown to inform users. (ex: Sally calling, Calling John, On another call, Do Not Disturb).
- **Provides easy access to everyone in the system.**
- **Internal communications do not tie up CO lines.**

DR2



norstar

Dialpad Feedback

- When the handset or the set speaker is active, the set produces a feedback tone and shows a number on the display each time the user presses a button on the dialpad.
- Allows the user to discern whether button depression was recorded by the set.

DR2

Dial-0 Set (5)

- Can be reached from any other telephone merely by dialing 0.
- Simplifies internal communications.
- Allows for quick and easy access to a receptionist or control person in the office.
- Station sets can direct "0" to different destinations

DR2/4



norstar

Dialing Modes

(on-hook)

Feature * 8 2

Automatic Dial

- Pressing the dialpad buttons will automatically select the set's Prime line and dial the call (set must have a Prime line).

Pre-Dial

- Allows users to enter, check and change a telephone number before selecting a line and making the call.

Standard Dial

- Allows users to choose a line and dial a call without picking up the handset (same as DR11 dialing mode).
- Default dialing mode.

- **Automatic Dialing is both convenient and time saving because users can start dialing immediately without having to select a line.**
- **Pre-Dialing is convenient when dialing in case a mistake is made.**
- **Standard dialing lets the user choose a line and dial without having to lift the handset until the call is answered.**

DR2/3



norstar

Disconnect Supervision

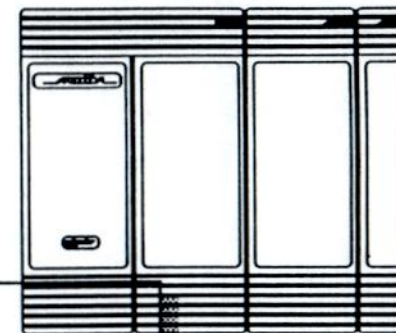
- Once an external party disconnects from a call, Modular drops the line.
- Requires the Modular KSU and Trunk Cartridge that supports Disconnect Supervision.
- Prevents an external line from being tied up by being considered on hold or in use, when in fact the external party has disconnected. **DR3**

Direct Inward Dialing

- Provides public network access to station sets by- passing the attendant
- Provides increased support for larger number of station sets and extends existing Norstar call coverage features to incoming calls on DID trunks. **DR4**



norstar



Direct Inward System Access

- Provides Remote Tandem Access from public network
- Provides Remote Access from public network to selected Norstar features
- Provide security access mechanism

DR4

Distinctive Ring/Call Waiting

- Allows user to be alerted with special ringing or special call waiting tones when calls are received from a user specified list of numbers.

DR5



norstar

Discriminating Ring Cadences

- The user may distinguish the type of line (internal or external) ringing on the set by means of the ringing cadence.
- User can distinguish between internal and external calls. DR2

Distinctive Ringing (ring type)

Feature *6

- The set may be programmed to ring with one of four distinct ringing tones.
- Users can determine if their telephones are ringing by listening to the sound of the ring.
- Extremely useful in open office environments.
- Eliminates confusion.

DR2



norstar

DN Length

- The DN can be 2 to 7 digits in length.
- **Can match more and larger numbering plans. DR2/3**

Do Not Disturb Feature 85/#85

- Suppresses Page announcements, Ring Again and all other tones and ringing, except for Held Line Reminder.
- An incoming call will still cause the line indicator to flash.
- The call will be forwarded to the Prime set (if assigned).
- **Allows the user to work without interruption from the telephone.**

DR2

E&M Trunks

- Allows the connection of Norstar systems to create a Norstar network between locations.
- Provides better flexibility in terms of dialing plans
- Requires E&M/dISA trunk cartridge which provide 2 trunk circuits.
- **Ensures cost-effective efficient internal communications.**

DR4



norstar

Emergency Transfer - Power Fail Cut-through

- Provides basic telephone service with a 500/2500 set, should a power failure occur.
- The KSU has two emergency transfer ports, while each Trunk Module has one.
- **Allows users to make and receive telephone calls while the power is out. DR2**

Do Not Disturb Override

- When trying to reach a telephone that is in the Do Not Disturb mode and it is essential that the call be connected, the Priority Call feature can be used to Override the DND setting.
- **Users who have their sets in DND mode can be informed of important calls and messages.**
- **Other Norstar users can call a set in DND mode. DR2**



norstar

Exclusive Hold

Feature 79

- Assures that your call can only be retrieved at the telephone from which it was put on hold.
- The line indicator shows busy at all other telephones.
- Held line reminder is not sent to the Prime set.
- Ensures that your Held call can not be picked up by others.
- Provides system-wide privacy and confidentiality.

DR2

Flexible Call Restrictions and Overrides

- Restrictions and overrides are customer-definable and can be applied to individual lines and/or sets.
- Maintains general Call Restrictions cost control, yet provides system-wide access to selected numbers within the restricted categories.

DR2



norstar

Flexible Numbering Plan

- Sets can have 2, 3, or 4 digit intercom numbers on a non-expanded system and 3 or 4 digits numbers on an expanded system.
- Line Pools can have 1 to 4 digit access codes.
- DN's can be changed so that sets can be given consecutive DN's that correspond to their locations.
- Users can be given intercom numbers that match other DN's such as PBX's.
- Norstar Centrex system users can have the same Norstar and Centrex Station numbers.

DR2

Group Listening

Feature 8 0 2

- The Group Listening Feature routes calls through both the handset and the set's speaker, while only receiving voice transmission from the handset.
- Allows the caller to be heard by people in the office through the speaker while the recipient uses the handset to listen and speak.
- Group Listening reduces background noise heard through the handset.

DR3



norstar

Handsfree Answerback

- Allows a user to respond to a Voice Call without touching the telephone.
- The user can immediately begin a conversation through the set's microphone.
- **User can answer the telephone without having to stop working.**
- **User does not have to hang up when the conversation is finished.**
The caller disconnects after the conversation. DR2

Handsfree/Mute Capability

- The Handsfree feature allows the user to talk on internal and external calls without having to pick up the handset.
- The Mute feature turns the microphone off, if the user wishes to speak privately to someone else in the room.
- **Handsfree allows the user to move about freely without the physical restrictions of the handset or headset cord.**
- **Mute allows in-office conversations to be held privately from the caller. DR2**



norstar

Headset

- A headset may be attached to the M7208, M7310, or M7324 sets to allow the user to talk on the telephone without having to hold a handset or use Handsfree.
- Pressing Handsfree activates the headset when it is plugged in to the telephone set.
- Pressing Handsfree again mutes the headset.
- The Volume control bar on the set controls the headset volume.
- **The plug-in headset provides Handsfree convenience and handset privacy.**
- **Faster telephone answering service.**
- **Norstar allows both a handset and headset on all phones simultaneously DR2**

Held Line Reminder

- External calls are on hold will activate two periodic reminder tones until the call is retrieved.
- The reminder delay is pre-set in Configuration.
- Internal calls do not activate this feature.
- The reminder tones are also heard at a Prime set (if assigned to the same line).
- **Better customer service.**
- **Reminds the user that a call is still on hold. DR2**



norstar

Hot Line

- Hot Line is a special phone that is pre-programmed to call a specific internal or external number whenever its handset is lifted or handsfree is pressed.
- Can be used in conjunction with an ATA and 2500 set (no dialpad).
- **Gives users direct access to a special location without having to dial a number.**

DR3

I-hold / U-Hold Indication

- The line indicator on a telephone that places a call on hold, flashes at a faster rate than the line indicators for calls placed on hold by other sets.
- **Users can easily differentiate the calls they put on hold from calls others have put on hold.**

DR2



norstar

Language Choice

Feature 501 Primary, 502 Alternate

- The set's display contains built-in bilingual message capability.
- Display language can be changed by the set user.
- Users can choose their preferred language on a per set versus per system basis.
- Norstar can immediately accommodate the language needs of a company's customers who speak the alternate language.

DR2

Last Number Redial

Feature 5

- This feature automatically dials the last external number dialed.
- Saves time.
- Convenient when dialing numbers that are busy.

DR2



norstar

Line Pool Busy

- When all lines in a Line Pool are in use, the corresponding indicators on the telephone sets will turn on.
- The indicator turns off when a line becomes free again.
- Set provides visual indication of a busy Line Pool.
- Users do not have to press a button to determine if a line is available. DR2/3

Line Pools (Multiple)

Feature 64

- A group of external lines may be defined as a pool for making outgoing calls. When a set accesses the line pool, an idle line from this group is given to the set for one call only.
- Special lines such as WATS lines can be put into Line Pools.
- Reduces cost since a group of lines can be shared between many people.
- A button does not need to be dedicated to each line.

DR2



norstar

Link

Feature 71

- If the Norstar system is connected to a Private Branch Exchange (PBX) or Centrex system, a Link signal can be used to access special features.
- The Link signal is a short "hook-switch flash" with a programmable duration of 100 to 1000 milliseconds.
- **Allows Norstar sets to access Centrex or PBX features such as Call Waiting.**

DR2

Listen on Hold

- A user, having been put on hold, may hold the call, replace the handset and re-select the line in order to monitor the other end via the speaker. The two-way conversation can be resumed by lifting the handset or pressing Handsfree.
- **The user can continue working without having to hold the handset, while waiting for the other party to return.**

DR2



norstar

Long Tones

Feature 808

- When making an announcement using the external Page or external and internal Page, the Long Tone Feature is automatically activated for the external Paging system and allows users to control the length of the DTMF tone for signalling.
- Allows users to signal specific external speakers to receive a page, if several are installed.
- Allows Norstar sets to access devices that require longer than standard DTMF tone durations or are attached to Analog Terminal Adapters (ATA's).

DR2/3

Manual Line Selection

- Any idle or ringing line can be selected by pressing the line button.
- User can access the desired line.

DR2



norstar

Message Waiting Indication

- Notifies Norstar set users when a voice message is waiting at the CO message center
- **No need to have a voice mail system on premise.**

DR5

Message Waiting / Reply

Feature 6 5

- "Message for you" on the display of a set notifies that person to contact the caller.
- The recipient dials Feature 65 to find out who sent the message notification and to automatically return the call.
- Feature # 6 5 cancels message notification.
- Feature 1 is used to send the notification.
- **Improves internal communications**
- **No need to look up or remember the extension numbers of the people who left messages.**
- **No need to check with someone else to see if there are any messages.**

DR2





norstar

Moving Line Buttons

Feature * 8 1

- Lines can be moved to different memory buttons on the set (excluding the Handsfree, Intercom or Answer buttons).
- The button must have an indicator
- Features already on the new line button will automatically be moved to the line's original location.
- **Allows more customization of each set.**
- **Lines can be grouped together.**

DR3

Music / Tone / Silence on Hold

- Allows all external calls to be presented with music, a periodic tone, or silence when placed on hold.
- **Music on Hold feature helps pass the time for a caller on hold**
- **Music / Tone on Hold feature reassures the caller that he/she has not been disconnected.**
- **Company tapes can play advertisements or other specific audio recordings.**

DR2



norstar

On-hook Dialing

- A user may activate the set's speaker and dial digits for an internal or external call without lifting the handset or pressing Handsfree.
- Upon hearing the other party answer, the user lifts the handset or presses Handsfree.
- On-hook dialing is available to all Norstar sets.
- **Greater convenience. The handset need only be picked up (or Handsfree activated) if the call is answered.**

DR2

Page Origination and Reception

Feature 6 0

- A user can page someone in one of three ways:
Internal (Feature 6 1) only through the set speakers to one or all six paging zones,
External (Feature 6 2) only through customer supplied amplifier and speaker, or
Both External and Internal (Feature 6 3).
- Feature 6 0 gives the user the choice of the above three means of paging.
- **Greater flexibility. Pages can be made to specific zones in an office, over either the set speakers or external speakers.**
- **Pages will not disturb people who do not need to hear them.**
- **Quick and effective dissemination of company-wide or department-wide information.**

DR2



norstar

Pause

Feature 7 8

- This feature inserts a brief pause in a number being dialed.
- It is used to delay the dialing of digits until an external resource is ready to receive them.
- **Easier programmed dialing.**

DR2

Pre-selection / Call Screening

- For external lines, the display of a set will show the assigned name of an answered line.
- For internal lines, the display of a set will show the assigned name the caller's set.
- **Allows user to instantly determine who is calling or which line is being used.**
- **Confirms desired destinations.**

DR2

Prime Line

- A Prime Line is the CO, Intercom, or Line Pool line that is assigned to a set as its primary line of use.
- If a set has a Prime Line, Automatic Outgoing Line Selection occurs when the user picks up the handset and presses Handsfree or an external Autodial button.
- A Prime Line is assigned in Configuration
- **The user does not need to select a line when making a call**

DR2



norstar

Prime Phone

- A Prime phone receives unanswered calls., supports Delayed Ring Transfer, Held Line Reminder and Do Not Disturb transfer.
- Each line in the system can be assigned a Prime phone.
- **More efficient call handling because a Prime phone will get unanswered calls.**
- **CO lines for departments can be answered by a department receptionist rather than a company receptionist.**

DR2

Priority Call

Feature 69

- Allows a connection with another set in the office to be forced even if the set is busy or in Do Not Disturb.
- Users have the option to block a Priority Call.
- **Ensures that important calls get through.**

DR2





norstar

Privacy/Non-Privacy

Feature 8 3

- When a user is on a line, no other set can access the call.
- Privacy can be turned off to allow someone else to join the call.
- Can be administered on a call by call basis by the set user or on a line by line basis in configuration.

- **Ensures security and confidentiality.**

DR2/3

Private Lines

- Private lines are any external lines designated as exclusive to one set.
- Delayed Ring Transfer can forward unanswered calls to a Prime set.
- Controlled in Configuration

- **Provides complete privacy and line availability since only one set has access to this line.**

DR2



norstar

Programmed Release

Feature * 8 9

- Users can program autodial buttons to release the calling set from a PBX or Centrex system once the programmed numbers and codes have been sent to that system.
- Allows a single button to be programmed to terminate a call once the information has been sent.
- Reduces the number of buttons that need to be pressed. **DR3**

Release

- The Release (Rls) button is used to disconnect an active call or exit from a feature.
- Allows users to disconnect on-hook calls without having to lift and then replace the handset.
- Allows users to disconnect off-hook calls without having to replace the handset. **DR2**



norstar

Restriction Override Passwords (Multiple) Feature 6 8 + password

- This feature allows a privileged user to initiate a call from any set on any line, overriding any call restrictions applied to the set and line being used.
- Up to 100 passwords are available.
- **Improves convenience and efficiency for selected personnel by allowing them to override Call Restrictions on any set or line.**

DR2

Restrictions and Overrides-Enhanced

- Provides more flexibility in assigning local dialing restrictions
- Extends dialing restrictions to cover individual lines at a set

DR4



norstar

Ring Again - on busy set, on busy Line Pool, on No Answer

Feature 2

- Ring Again on busy set alerts a user when a previously busy telephone becomes available.
- Ring Again on busy Line Pool alerts a user when a line becomes available in a line pool.
- Ring Again No Answer alerts a user when a set that was not answered is used.
- **Saves time and frustration and increases productivity because the user does not need to repeatedly try to get a busy set, an unanswered set or a line from a busy line pool. DR2**

Run /Stop

Feature * 9

- This feature inserts a "break point" into the dialing sequence of digits or characters programmed into a speed dial number or onto an external autodial button.
- The first sequence is sent the first time the button is pushed, while the next sequence is held until the button is pushed again.
- This may be necessary when connected to a PBX, Centrex or a similar system.
- **Allows the programming of a single autodial button for number sequences. DR2**



norstar

Saved Number Redial

Feature 6 7

- Allows user to store the number of a current outside call in Norstar's memory and dial the same number later by pressing the Saved No. button.
- **Saves time and adds convenience since the user does not have to look up the number again.**

DR2

Selective Call Acceptance

- Screens incoming calls against a user specified list of numbers and then only accepts calls from users on the list.
- Can be used to filter out unnecessary interruption while still allowing important calls to get through.

DR5



norstar

Selective Call Forwarding

- Screens incoming calls against a user specified list of numbers and then forwards those calls from a number in the list to a designated number thereby giving the user the ability to give special treatment to important calls.

DR5

Selective Call Rejection

- Screens incoming calls against a user specified list of numbers and then reroutes any calls from those numbers in the list to an announcement informing the caller that the called party is not available.
- The last incoming number may be added to the list even if the number is blocked.

DR5



norstar

Selective Line Redirection

Feature 84

- Lines on set redirected off Norstar
- One, some or all lines on set may be redirected
- Outgoing line, or line pool must be selected to redirect call

DR4

Selective Call Forward Feature 8 5

- By invoking Do Not Disturb when a CO line is ringing, the call will be transferred to the Prime set.
- **User can decide not to answer a particular call by pressing DND while the set is ringing.**

DR2

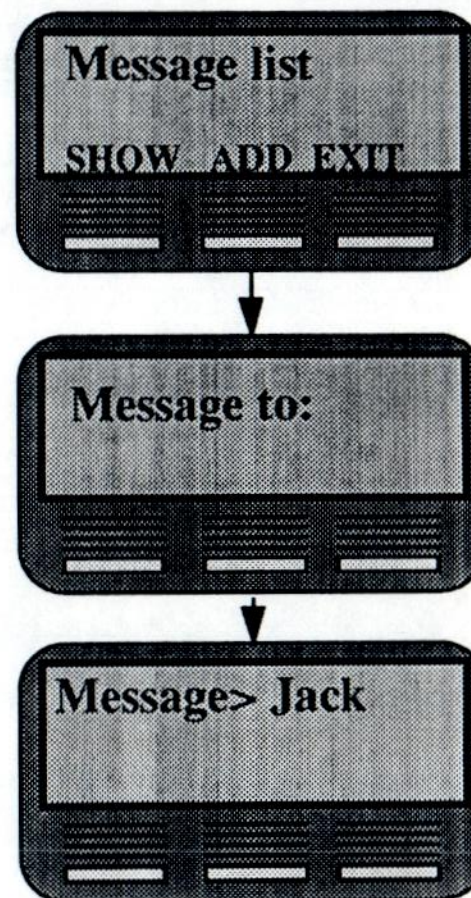


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Send Message

Feature 1 + Intercom #

- "Message for you" notification can be sent to any set in the system to request the recipient to call the sender back.
 - Each set can send 4 notifications to 4 different sets.
Each set can receive 4 messages from 4 different sets.
 - Central Answering Position can send up to 30 messages.
 - Saves time and adds convenience because the message recipient can
return the call with the push of a button. No need to look up numbers.
 - Secretary can send message notification when she has a written message
- DR2**





norstar

Service Modes

Feature 87

- Replaces DR11's Night Service feature.
- Three separate Service Modes can be programmed (ex: Night Evening, Lunch, etc.), each with their own unique ringing arrangements.
- The Dial Zero telephone, Trunk Answer feature and Auxiliary Ringer can also be programmed for each Service Mode.
- Two Dial Zero sets are available for each Service Mode.
- The start and stop times for each Service Mode can be programmed.
- **Provides increased control over the system's call handling set-up over three periods of time.**

DR3



norstar

Speed Dial - System - Personal

Feature 0 + code

- System Speed Dial provides access to 70 external phone numbers (01 to 70) frequently used by everyone in the Norstar system. The numbers are shown on the display when dialed. Numbers are changed in Administration.
 - Personal Speed Dial provides access to an additional 24 external telephone numbers (71 to 94) frequently used by individual set users. Each set has its own two digit Speed Dial codes 71 to 94.
 - Numbers can be up to 24 digits in length (DR11 is 16 digits).
 - The line that the call will go out on can be programmed.
 - Whether the number will be shown or the display will be blank, can be programmed for each Speed Dial code.
 - A name can be assigned to the stored number and shown on the display.
 - Speed Dial numbers can be programmed to override restrictions.
-
- **Provides fast access to numbers frequently dialed by everyone in the system and individual set users.**
 - **Prevents mis-dialing.**
 - **Saves time and adds convenience.**

DR2/3



norstar

Telephone Administration Lock

- Three settings determine the extent to which features are locked or unchangeable for each set:
Full: User can only change volume control, ring type, display contrast, ring volume, and use Button Inquiry.
Partial: User can do everything in Full Lock plus Ring Again, Send Message, Do Not Disturb, and Background Music.
None: User can change any feature available at the set.

- **Allows administrative control over the use of each telephone set.**

DR3

Timed Release Feature 7 2

- The Timed Release signal releases a call from the line but retains the use of the line for another call.
- **A second call can be made on a line without allowing anyone else to access the line first.**

DR2



norstar

Transfer - Direct - with Announcement

Feature 7 0

- Transfer Direct allows the user to transfer a call directly to another set. If there is no answer, the call returns to the set that transferred the call.
- Transfer with Announcement allows the user to announce an internal or external call to the designated party before transferring it through.
- **Transfer Direct allows for the rapid and efficient processing of transfer calls.**
- **Transfer with Announcement ensures that the person is there to receive the transferred call and allows the recipient to prepare for or reject the call before it is received.**

Trunk Answer

Feature 8 0 0

- Allows the user to answer a ringing telephone from any other set in the system.
- This feature is only functional for calls ringing on lines in Night Service mode.
- **Calls can be answered anywhere in the system.**



norstar

Unsupervised Conference

- allows a Norstar user to connect one external party to another external party and leave them connected when the Norstar user releases
- **Receptionist no longer has to wait on the line**

DR4

Voice Call

Feature 6 6

- Allows the user to make a voice announcement or begin a conversation through the speaker of another telephone set in the system. The recipient will hear an alerting tone, followed by the user's voice.
- **Saves time and adds convenience since the recipient does not have to pick up the handset or press handsfree to begin talking to the caller.**



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Voice Call Deny

Feature 8 8

- Allows people to prevent their sets from receiving Voice Calls. Incoming Voice Calls will be received as normal ringing calls.
- Prevents voice interruptions while still alerting user of internal calls.

Volume Control Bar

- Controls the volume level of the handset, handsfree speaker, headset, background music and telephone ringing.
- Feature * 8 0 is used to control the volume of the telephone's ring without having to wait for a call to come in.
- Users can adjust the volume of the speaker, handset and headset to meet their individual preferences and circumstances with a single volume control.



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PART VI STARTALK



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StarTalk

MARKET POSITION

- 75% of all business calls do not get to the destination on the first attempt
- 50% of all calls are one way calls
- 67% of all calls are considered less important than the work they interrupt
- 50% of all calls are longer than they need to be



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StarTalk

MARKET POSITION

An executive spends:

- 37% of their time out of the office
- 18% of their time on the telephone
- 14% of their time in meetings
- 13% of their time working and do not want to be interrupted

This leaves only 12% of the work day where an executive is in their office and free to take calls.



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StarTalk

MARKET POSITION

The result has many consequences:

- Decision making takes longer
- Low productivity
- Increased costs to operate the business (higher phone bills)
- Poor corporate image
- Poor customer service
- Loss of business



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StarTalk

What is StarTalk?

StarTalk is a totally integrated automated attendant that offers call routing features and voice messaging.



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StarTalk

Market Position

StarTalk was designed to work as an extension of Norstar. It provides:

- Simple user interface
- Easy to install and maintain
- Prices with emphasis on small businesses
- Minimum training





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StarTalk

StarTalk has three main components:

- Automated Attendant
- Voice Mailboxes
- Custom Call Routing



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StarTalk

Automated Attendant

- Works like a receptionist would when answering incoming calls. The automated attendant presents a list of options to the caller.
- When an option is selected, the automated attendant responds to the option and directs the call to an extension or a mailbox within the system or directs the caller to the company directory or to the designated operator.



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StarTalk

Voice Messaging

- Mailboxes are added by the system coordinator and initialized by the user. The mailboxes store the message left by the caller in memory. After the mailbox is initialized, anyone who calls is able to leave a message.
- Each user can customize their mailbox with special StarTalk options. The options are:
 - Primary and alternate greeting
 - Password protected



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STARTALK

VOICE MESSAGING FEATURES

- Listen/record/copy/delete verbal messages
- Distribution Lists available
- Primary and alternate personal greetings

- Many command features-skip forward/backward/pause etc.
- New message queries
- Calling party ID on all internal messages



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STARTALK

SET ANSWERING FEATURES

- Call Forward to StarTalk
- Call Forward No Answer to StarTalk
- Primary and Alternate Greetings
- Departmental Greetings



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StarTalk

Customer Controlled Routing

- Provides single digit access to an extension, mailbox or department.
- Caller's can:
 - Listen to main menu
 - Listen to a pre-recorded information message
 - Dial an extension

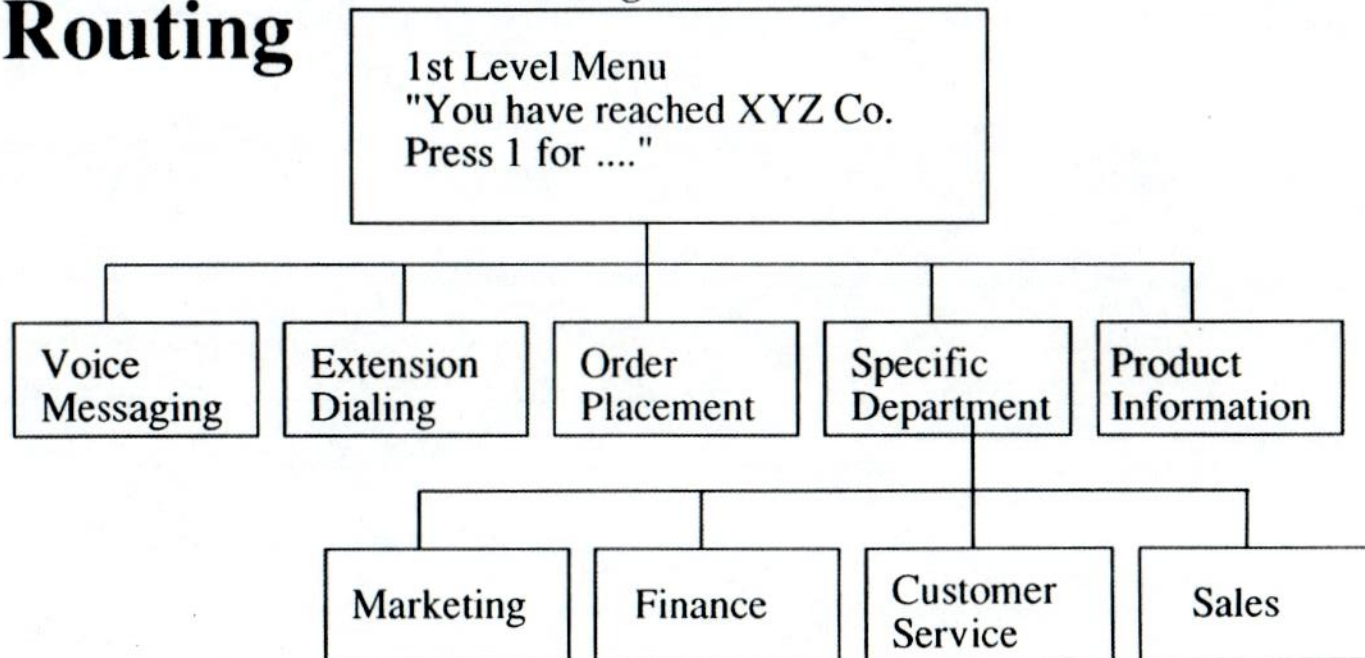


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StarTalk

Custom Call Routing

Incoming Calls



Works with the Automated Attendant and Voice Messaging capabilities to provide enhanced customer service in a user-friendly, reliable manner.

nt northern
telecom



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StarTalk-Mini

24 Mailboxes
Non Expandable
8 Levels of Class of Service
Turn on or off voice mail
Turn on or off general mailboxes
90 minutes of storage
CCR (1 level included)
Two distribution lists
Report generation
One Greeting table



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StarTalk

500 Mailboxes
Dual Language Support
16 Levels of Class of Service
Turn on or off voice mail
Turn on or off general mailboxes
Up to 550 minutes of storage
CCR (10 levels included)
99 distribution lists
Report generation
Four Greeting tables



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StarTalk

Class of Service

- Language option
- Maximum message length
- Maximum mailbox storage
- Message retention
- Personal greeting
- Specified greeting time
- Distribution Lists
- Remote Notification
- Retry intervals
- Number of attempts



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StarTalk

Mailboxes-Personal, Guest, and Information

Benefit:

- Personal and guest mailboxes provide the owner the ability to receive detailed, confidential messages 24 hours a day.
- Information mailboxes repeat the same information to multiple callers, off loading the work from a secretary or a receptionist ie co address/ordering procedures.

Remote Message Notification

Benefit:

- Messages are immediately sent to users wherever they are located, therefore improving both external and internal communications.
- Users away from the office can be notified by telephone or pager (external) and intercom (internal) whenever a message arrives in their mailbox; the message can be accessed using a touchtone phone.

nt northern
telecom



StarTalk

Message Delivery Options

Benefit:

- A message can be delivered as normal, certified, private, or urgent.
- Gives the user increased control of how to deliver messages.

Group Distribution Lists

Benefit:

- Allows the same message to be delivered by a group of users by entering only one address destination or distribution list number.
- Saves time in message preparation, production and delivery.



StarTalk

Message Waiting Notification

Benefit:

- When new messages are received, "Message for you" appears on the user's LCD display; when the mailbox is opened, the number of new and saved messages is heard.
- Improves communications as it eliminates the need to log on to check for new messages.

Name Confirmation when Sending Messages

Benefit:

- The name and number of the internal person or mailbox being contacted appears on the LCD display.
- This eliminates delivery errors.



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StarTalk

Express Messaging

Benefit:

- Internal messages can be sent without opening a person's mailbox; the sender's name and extension are automatically included.
- Improves internal communications.

Automatic Reply to Internal Messages

Benefit:

- A mailbox owner can automatically reply to a message with one key stroke.
- Saves time, and, there is no need to loop up extension numbers.



StarTalk

Flexible Business Hours for Company Greetings

Benefit:

- Prerecorded morning, afternoon, evening, and non-business hours greetings can match a company's business hours.
- Customer service is improved by eliminating any confusion over hours of operation.

Greeting Tables

Benefit:

- One greeting table is available for a company to customize the answering of incoming lines; each table contains four greetings (morning, after, evening, and non-business), and ten greetings can be programmed.
- Improves customer service as each customer receives the appropriate time of day greeting.



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StarTalk

Single Digit Menus

Benefit:

- Custom Call Routing allows a customer to select a menu option by pressing a single digit.
- Improves customer service; ability to automatically direct the customer's call to the proper location (ie. extension, sales dept., customer service, etc. message mailbox, or an information mailbox).

Enable/Disable Voice Mail

Benefit:

- Ability to enable or disable the voice mail portion of StarTalk and use the Automated Attendant and/or Custom Call Routing functionality.
- The caller will always revert back to the Automated Attendant and be able to leave a message with a personal mailbox.



StarTalk

Report Generation

Benefit:

- Various reports can be printed at the request of the system coordinator.
- Helps monitor StarTalk programming and usage and simplifies updates and customization.



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StarTalk

Benefits

- Puts you in control of your business telephone usage
- Increases productivity
- Improves communications
- Improves customer service



StarTalk

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StarTalk Meets Business Needs

- Eliminates telephone tag
- Increases telephone efficiency
- prompt response to inquiries
- Overcomes limitations of 9-5 working days



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StarTalk

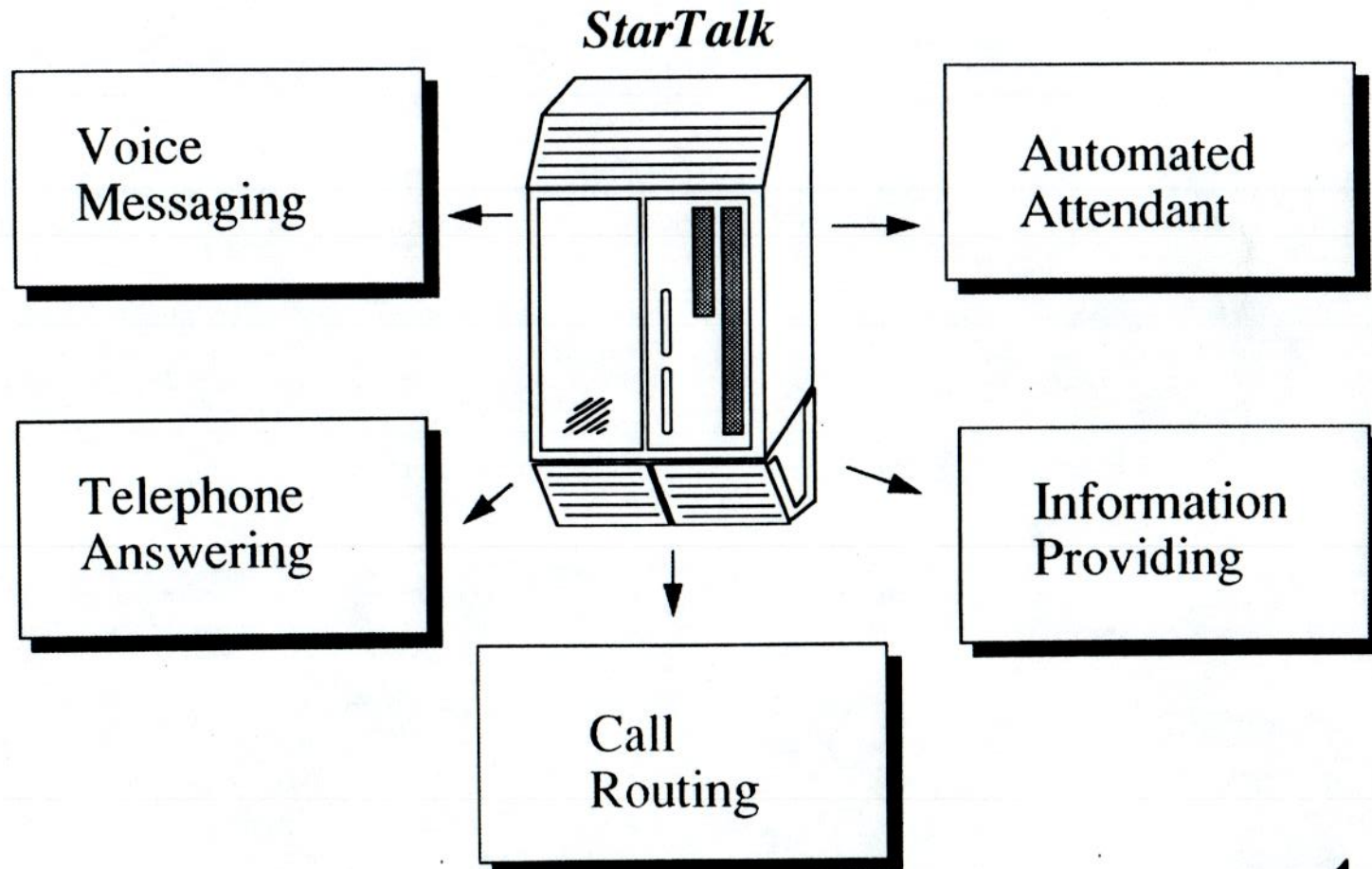
Voice Mail Summary

- Custom Call Routing
- Voice Mail
- Automated Attendant
- Fully integrated voice and visual prompts
- LCD messaging
- Remote capabilities



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StarTalk





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StarTalk

***Available to you and your customers
24 hours a day, 7 days a week***



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STARTALK

CONFIGURATION GUIDELINES

Startalk Mini: two channel model 90 min. storage	Up to 24 users
110: two channel model 1 hr. 50 min storage	Up to 25-40 users
165: four channel model 330 min. storage	Up to 60-80 users
385: four channel model 550 min. storage	Up to 100-120 users

NOTE: All configurations are application and traffic dependent.

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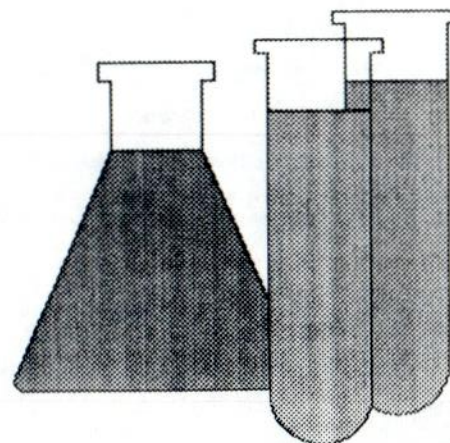


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Applications In All Markets



- Airlines
- Banks
- Education
- Medicine
- Hospitality
- Real Estate
- Transportation
- Travel
- Utilities



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PART VII

NORSTAR MANAGER

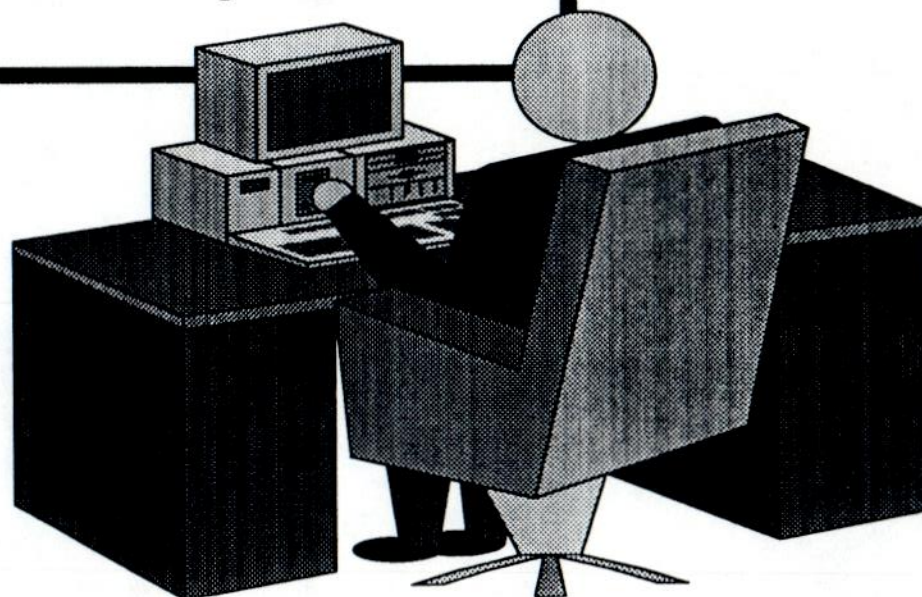


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Norstar Manager

What is Norstar Manager?

Norstar Manager allows the remote administration and maintenance of Norstar and from one central location, the ability to administer and maintain multiple Norstars.



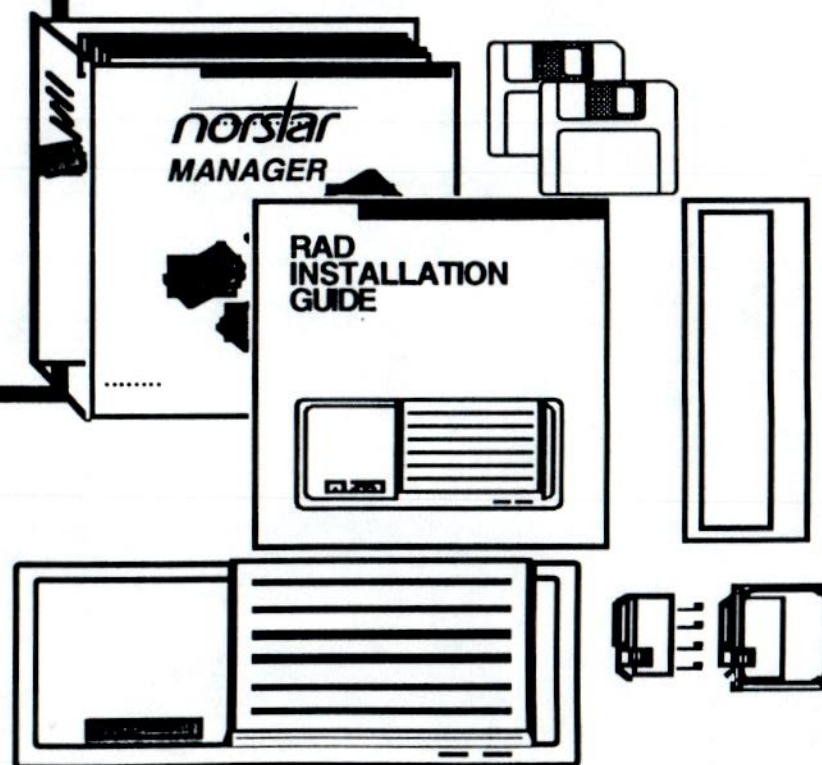


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Norstar Manager

Components

- Norstar Manager Software and Documentation
- Remote Access Device (RAD)





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Norstar Manager

Norstar Manager Software

- On site or remote administration and maintenance access to Norstar systems via RAD

Requirements

- DOS based 386 PC
300, 1200, 2400 bps modem
Not dedicated



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Norstar Manager

Remote Access Device-RAD

- Allows the Norstar Manager software to communicate with the Norstar KSU
- Designed to be installed on the wall or at the desktop
- Interfaces: 25 pin RS-232, CO line, TCM



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Norstar Manager

Modes of Operation

On Site Operation-Connected directly to the KSU

Remote Operation-Connected via a modem



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Norstar Manager

Features

- Remote or local operation
- Initial system programming
- Adds/moves/changes
- Monitor Alarms
- Troubleshooting
- Maintenance
- Centralized database
- Telephone and line programming



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Norstar Manager

Features-Cont'd

- Copy
- Inventory
- Security
- Task Schedule
- Status of telephones/lines/systems
- Report generation
- Restore



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Norstar Manager

Customer Database

- Customer name and number
- Site ID
- Contact name
- Number to access the KSU
- System installed and software version
- Time zone differential



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Norstar Manager

Requirements

- 80386 20-25 MHz Processor
- MS-DOS Compatible
- MS-DOS 3.31 or higher
- 4MB of RAM
- 3.5" Floppy
- Color VGA Monitor
- 100MB Harddrive or higher (depends on the size of the customer database)
- Enhanced keyboard-101 keys
- At least one parallel port
- 2400 bps modem
- At least one serial port



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Norstar Manager

Compatibilities

- Compact DR2 6.4 or Higher
- Modular DR2 5.8 or higher
- Modular DR3 6.5 or higher
- Centrex 6.4 or higher

Phase II is DRV Compatible.

3X8, Compact and Modular DR1 will not be supported by Norstar Manager



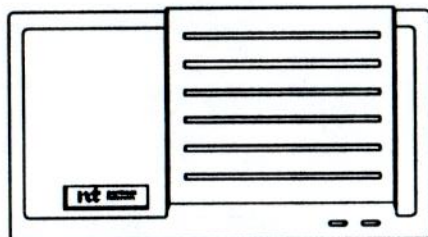
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PART VIII PERIPHERALS



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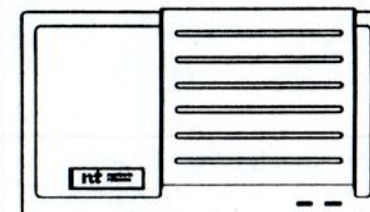
ATA



- The ATA converts Norstar digital interface to analog for communication with such analog devices as single line telephones, FAX machines, modems and answering machines.
- Single line sets can interface with Norstar system features such as Call Waiting, Call Forward, and many more.

SMDR

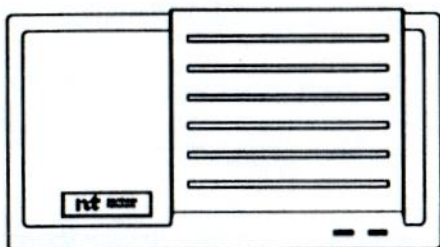
- Station Message Detail Recording (SMDR) serves as an interface which lets the user track basic call detail recording information by: all calls, outgoing calls only, calls with an account code, or by long distance calls.
- Connected to any station port , it provides basic reports in Norstar or Meridian SL-1 format.
- The unit is the interface to import call detail information into Norstar PC Applications software.





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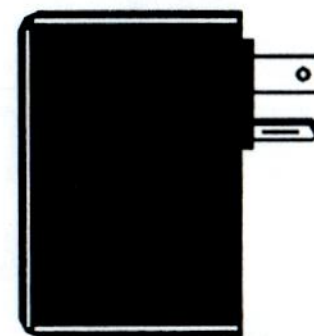
DCI



- The Data Communications Interface is offered in two models: the DCI-B replaces the base of an M7310 set; whereas the DCI-D connects to a terminal with the option of connecting to a Norstar set.
- These Hayes-compatible modems support computer communications over Norstar digital intercom lines at up to 19.2 baud, and externally over analog lines at 300, 1200, or 2400 baud.
- Voice and Data calls can be simultaneous from a single Norstar station port over a single pair of twisted wires.

SAPS

- The Station Auxiliary Power Supply extends the loop length from 1,000 to 2,600 feet between a set or terminal and the KSU, using a dedicated cable to connect the two locations.
- One SAPS powers up to three sets at 2,600 feet or two CAP modules at 1,000 feet.

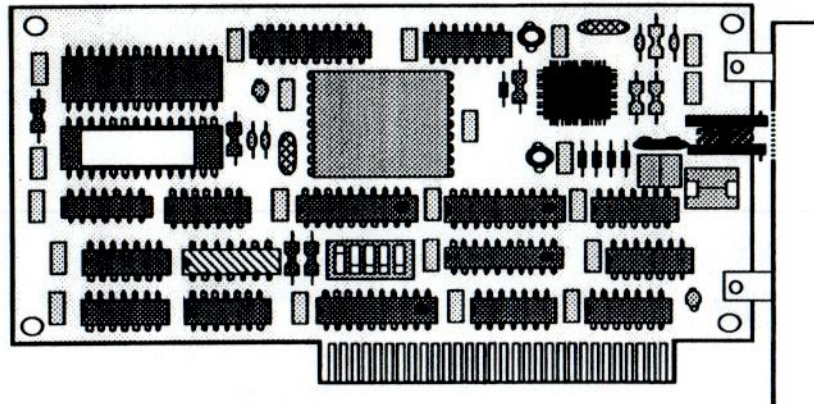




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PCI

- The Personal Computer Interface provides the hardware connection and software support to run Norstar software applications, such as Dial-by-Name and Call Accounting.
- Hardware comes in the form of a card that fits into a PC extension slot.
- The software automatically configures your PC to allow one or more Norstar applications to operate simultaneously.





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Norlink

- **Norlink connects a PC to a Norstar business system so that Norstar PC applications can interface with Norstar to provide additional features to all telephones on the system.**
- **Norlink performs the same function as the PCI card.**

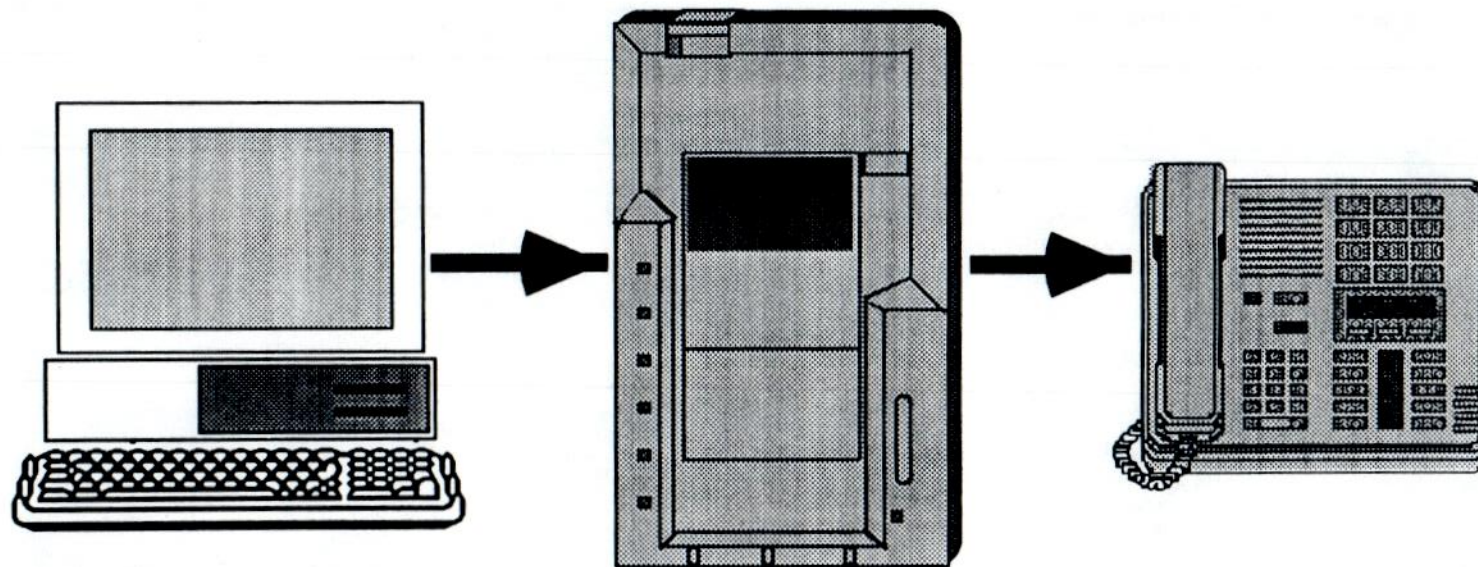
The Norlink is designed to operate on PCs equipped with the Microsoft MS-DOS Operating System.





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PC Based Applications Establish Sessions With Norstar Sets Through the Norstar KSU



Compact 6x16 KSU